

FIG. 3

66 CONTROL SECTION

68 DRIVER SECTION

FIG. 4

SHEET TRANSFER

COLLECTIVE TRANSFER OF FIVE SUBSTRATES

FIG. 6 (c)

FRONT VIEW OF BOAT

A. DROP/IN PAIRS

B. DROP/LIGHT-EMITTING SIDE DROP

C. DROP/LIGHT-RECEIVING SIDE DROP

F. CRACKING/CENTER CRACKING

J. NORMAL SUBSTRATE CONDITION

FIG. 6 (d)

SIDE VIEW OF BOAT

DETECTION POSITION

NORMAL CONDITION

D. DROP/REAR DROP

E. DROP/FRONT DROP

G. CRACKING/FRONT CRACKING

H. CRACKING/REAR CRACKING

FIG. 7 (a)

SUBSTRATE CONDITION

SIDE VIEW

FRONT VIEW (FROM A TRANSFER UNIT SIDE)

DETECTION WAVEFORM

NORMAL CONDITION

DROP OF LEFT (RIGHT) FACE OF SUBSTRATE

COMPLETE DROP OF SUBSTRATE

BACK FACE DROP OF SUBSTRATE

FRONT FACE DROP OF SUBSTRATE

SENSING DIRECTION

NORMAL (FOR COMPARISON)

FIG. 7(b)

BACK FACE

FRONT FACE

LIGHT AXIS

FIG. 8

SUBSTRATE SENSING IS STARTED

S10 SUBSTRATE TRANSFER UNIT IS DRIVEN, AND PHOTO-SENSORS ARE
DRIVEN

S12 SENSING WAVEFORM IS ANALYZED, AND ABNORMAL SLOT LIST IS
PREPARED

S14 WHETHER BEFORE OR AFTER HEAT TREATMENT

S16 WHETHER ABNORMAL SLIT IS FOUND

S18 SUBSTRATE TREATMENT TOOL IS CARRIED INTO TREATMENT FURNACE,
AND HEAT TREATMENT IS CARRIED OUT

S20 SUBSTRATE COLLECTION OPERATION (FIVE SUBSTRATES TOGETHER)

START: FIRST SLOT GROUP

(FIRST TO FIFTH SLOT GROUPS)

END: FINAL SLOT GROUP

S22 WHETHER ALL THE FIVE SUBSTRATES IN COLLECTION SLOT GROUP
ARE NORMALLY TRANSFERRED?

(NOT FOUND IN ABNORMAL SLOT LIST)

S24 COLLECTIVE COLLECTION

S26 ONLY NORMAL SUBSTRATES IN FIVE SUBSTRATES ARE COLLECTED
IN A MANNER OF SHEET TRANSFER

S28 SUBSTRATES IN NEXT SLOT GROUP ARE COLLECTED (FIVE
SUBSTRATES TOGETHER)